〔Chem. Pharm. Bull., **34**, 4308 (1986)〕

Flocculation Kinetics of the Didisperse System-Computer Simulation of Flocculation by thc Random Coalescence Model.

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The process of Brownian flocculation of suspended particles has been simulated on the random coalescence model for polydisperse systems by using a digital computer. The conformity between von Smoluchowski's and Müller's theories was examined. It was found that the simplifying assumption by which the concept of collision probability is introduced into the theories was adequate. Since no such assumption was necessary in the present model, the model can be applied to more complicated polydisperse systems. Moreover, this model can be used to obtain not only the total number of particles formed but also the particle size distribution at any peroid in the flocculation process.

〔J. Soc. Powder Tech. Jpn., **23**, 685 (1986)〕

Computer Simulation of Agglomeration with Compaction.

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Computer simulation of agglomeration with compaction was carried out using a random addition model, which defined the probability of adhesion of particles at their collision sites as a function of the product of reciprocals of their radii. The agglomeration process simulated by this model was described by a non-random coalescence agglomeration. With as agglomeration proceeded, the outer surface of the agglomerate was compacted more closely than the inside one. It was found that the compaction process of the agglomerate was represented by a modified Kawakita's equation.

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The Agglomeration Mechanism of Phenytoin (Antiepileptic) by a Novel Agglomerated Crystallization Technique.

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Novel agglomerated crystallization technique, i. e. neutralization and solvent change techniques, were devised, in order to design phenytoin (antiepileptic) crystals so as to be directly compounded during their formulation. The proposed techniques could directly transform the fine precipitated crystals into free-flowing spherical agglomerates during crystallization. The agglomeration processes by neutralization and the solvent change methods were described in terms of a random-coalescence model and a mixed model with layering, respectively. The micromeritic properties of the agglomerates, e. g. surface topography, particle density and mechanical strength, depended on the agglomeration mechanism.